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Modular or flexible class scheduling implies the division of each school day into 20 modules. At Trezevant high school in Memphis, Tennessee, up to 40 percent of a student's time over a 5-day period may remain unscheduled. For students unable to manage the freedom of flexible scheduling there are supervised study halls and continuous counseling. One critic of the modular system claims that it is too administratively complex and troublesome, and that the system, which requires the use of computers, is being promoted mainly by the electronics industry. However, proponents of modular scheduling claim that it offers closer contact with teachers and greater opportunities for in-depth teaching, raises student morale, and is more democratic and natural. Evaluation of this system at a Wilmington, Delaware, high school revealed that although only 3 percent of the interviewed students felt they had more individual contact with teachers, most of them reported significant benefits from the new schedule. It is no t known, however, whether this schedule will be successful with disadvantaged youth. At present, the system is in use primarily in suburban schools. The great cost of this computer-based method is frequently prohibitive. (LB)

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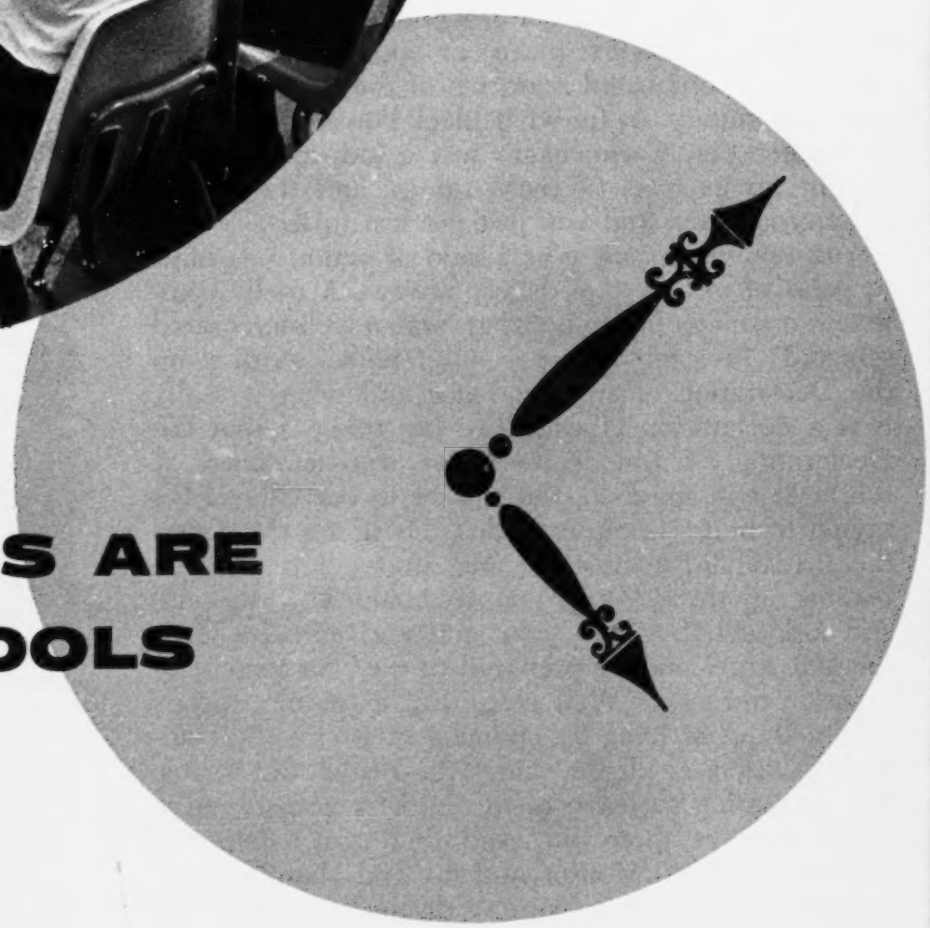

CHANGING TIMES ARE CHANGING SCHOOLS

By Clayton Braddock

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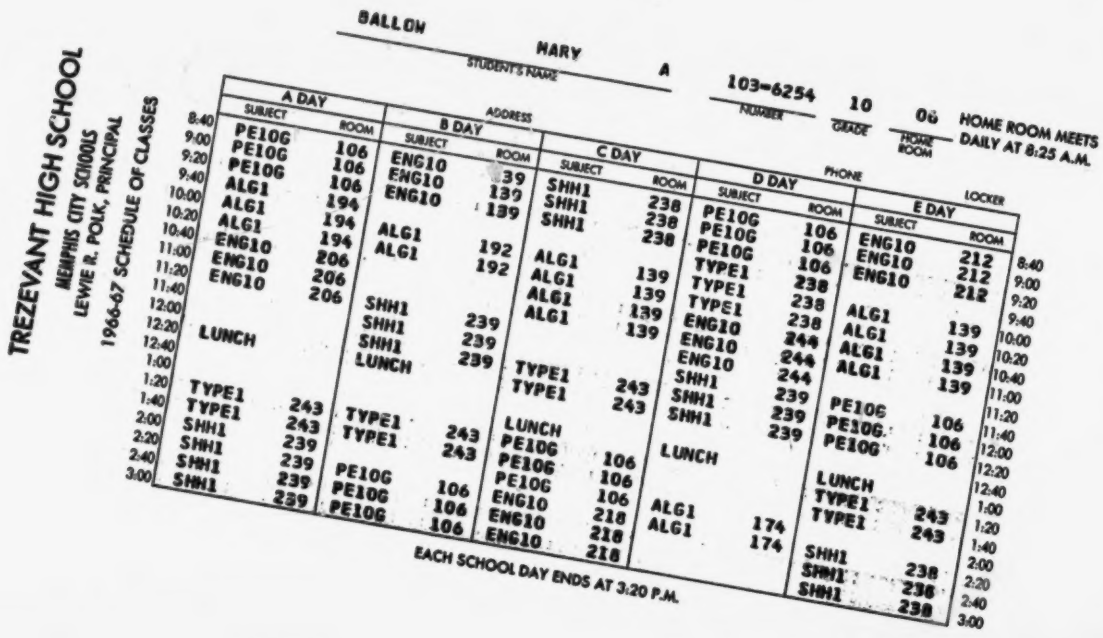
One is "doing dead time" when nothing is happening, and he's got nothing going for himself. Time is alive when and where there is action.

* * *

When the street dude lacks knowledge and power to manipulate time, he is indeed irrational. For the most part, he lacks skills and power to plan a move up and out of the ghetto. He is "a lame" in the middle class world of school and work.

—From "Time and Cool People" by John Horton, assistant professor of sociology at the University of California, in Trans-Action, April, 1967



Class schedules at Memphis Trezevant are mass-produced by computers—but the results are individualized.

A BUSY CITY MERCHANT, in the course of any work day may spend two hours buying new goods, 90 minutes on an advertising campaign, 15 minutes discussing personnel problems with his partner, and an hour with a salesman. The rest of the day may be divided among other chores, each allotted the time demanded at the moment.

In the businessman's suburban home, his wife may spend an hour and a half buying groceries, 30 minutes sewing, 20 minutes writing a letter, two hours on house cleaning, 40 minutes washing dishes and two house on scattered smaller jobs.

On a crowded, noisy street of one of the city's slums, an unemployed high-school dropout—a teen-age boy—may spend an hour checking on a job opening, a half hour hanging a round a street corner with friends, two hours roaming the neighborhood looking for any kind of action to fill the day, 40 minutes shooting pool, and the rest of the day and night in an assortment of minor activities.

All three of these people use time to meet the demands of the moment and the day. Their schedules the next day may be sharply different, depending on their individual needs, opportunities and obligations. Yet a fourth person—and hundreds of thousands like him in junior and senior high schools—spends each school day learning subjects arbitrarily assigned one hour each (actually 50 minutes). Each daily schedule seldom varies.

This sharp contrast between arbitrary use of time in schools and the more natural way most people outside the schools use their time to work or play has opened the door to new concepts which may change the face of one of the oldest and most sacrosanct traditions in American education—time. One plan, so far adopted in only a few schools, goes by the name of modular or flexible scheduling.

The new method radically changes the daily time structure, dividing the school day into modules ranging from 10 to 30 minutes each, with the 20-minute module more typical. The computer-planned schedule might provide a single module for a short lecture class or a half dozen or more modules for a long science laboratory, an examining or some other special class. Using the 20-minute module, there are 20 modules in the school day.

The new system is not just a string of short periods. If a senior English lecture is required on any given topic, the schedule pulls together all seniors in one large lecture room at the same time. One teacher covers the material in two modules, freeing him from repeating the lesson five times as he would have done in a traditional schedule. Other teachers in the same subject are also freed from covering the same bloc of information and may use the time to read compositions, plan another lesson, or to meet in a discussion of a mutual problem. The large-group lecture is discussed later in small seminar groups of 10-15 students. Laboratory experiments may be completed instead of cut off at the end of the one-hour period. Art students may have a much-needed two-hour period to work on an esthetic problem not easily confined to the abbreviated hour period. Use of large-group sessions is really a way of buying the time for the smaller, more personal seminar groups.

"I don't think the change of time is the big issue," said Shelby Counce, co-ordinator of instruction for public schools at Memphis, where Trezevant High School began its third year of modular scheduling this fall. "It really means two things. It means that each student has an individual schedule. That is what you call truly individual instruction. And it means (students) making decisions on how they want their time used." At Trezevant High, as much as 40 per cent of a student's time in a five-day period may be unscheduled.

Teachers and principals in the modular scheduling situation are quick to say that the unscheduled time is not free time. They say that there are built-in meas-

If the fall term begins on a Wednesday, that first day is A day.

ures to help students make wise decisions on how time is to be used, to prevent waste of unscheduled modules, and to encourage fruitful independent study.

"You have to have provisions for those students who cannot use their time wisely," Counce said. At Trezevant High, a supervised study hall is kept for students with academic or discipline problems, but the number of these is usually low.

Students who need strict supervision are "one of our biggest problems," said Mrs. Carolyn McNeil, a 12th-grade English teacher at Trezevant. But she says that these amount to less than 10 per cent of the 1,000 students at the school. Others say that the students who don't function well under modular scheduling are the same ones who have trouble in any system. Continuous counseling is considered essential, but teachers generally agree that the 11th- and 12th-graders work smoothly within the new type schedule. "The main problem comes from the younger ones," said Mrs. McNeil.

One of the best-known critics of the schedule is Dr. B. Frank Brown, superintendent of schools in Brevard County, Fla., which includes schools at Cape Kennedy. In a book he wrote two years ago, he called

The Calendar Is Being Changed, Too

Rebuilding the school clock schedule is just one effort to change the use of time in American classrooms. The other is aimed at the school calendar.

Necessity, in the form of swelling numbers of students and a growing number of courses and programs, has already made the summer months just about as busy as the September-through-May part of the year. Thousands of students take remedial work, study advanced work in special classes, and even learn what school is all about in programs such as Project Head Start.

But some education thinkers want to go far beyond this. A few schools have already jumped into innovative calendar arrangements. These efforts, many educators believe, are just the forerunners to startling changes that will make an antiquity of today's school calendar in every school in the nation.

Basically, these schoolmen who want a change in the calendar say that the system of eight school months and four months of holiday is a product of the time when agriculture ruled the country's economy, and no longer meets the needs or suits the tempo of contemporary life. The plea for change can be heard in the South, still a heavily agricultural region but alive with the ferment of transformation to an industrial, urban society.

A plan scheduled to go in operation in Atlanta public schools, possibly as early as next fall, will extend the school year to nearly 12 months and also alter the daily schedule of many students throughout the city. In Maryland, the Montgomery County school board has approved a new 12-month employment program for teachers that will not only put the instructors on a full-time professional basis but will make it possible to expand the learning program to meet the needs of each school. In Buford, Ga., a trimester system has been adopted, adding the summer term to the school year. Students will be able to earn a maximum of two credits in an eight-week summer term.

Other unconventional calendar plans have been adopted elsewhere, mostly in schools outside the South and border region. One of the most outstanding schedules has begun its second year at Woodstock Country School in Woodstock, Vt. The plan operates on a 52-week school year, divided into four 10-week terms, separated by three-week holidays.

Headmaster David W. Bailey said the plan has been a great success and with few conflicts in family vacations or students' academic work. "A kid doesn't feel he is in a straitjacket. He can take things when he's more suited. He can slow down or he can speed up," the headmaster said. Of course, the private school has some advantages. It enrolls no more than 100 students and most of them usually wind up on Ivy League campuses.

It may be a long time before such a calendar is common in public schools because of the influence of long-standing traditions, resistance to change, and the complexity of shifting to such a new system. But in the South, the Atlanta program seems to be a harbinger.

The year will be divided into four 11- or 12-week quarters, each a full academic term. The fourth (summer) quarter will be optional for students but it will be equal in time, organization and instruction.

"The present school year is a carry-

modular scheduling a "gold plated fad." Since that time, he said, his opposition to it has been strengthened. "I'm very dogmatic about this," he added.

Modular scheduling is "just juggling time," said Dr. Brown. "You can't make it work unless you have a big bloc of time like study hall. They shove everybody into independent study and most students can't handle independent study."

Dr. Brown said the schedule need not be changed to shore up a student's weakness or to provide enrichment for the good student. "If a student is good in math or needs more math, give him two units (courses) in it and quit worrying about it," he said. Brevard schools use a two-semester system and students can change courses at the end of the first term. The many-moduled science lab, the superintendent said, is of no use since many of the modern science lab texts and other materials are written for the 55-minute lab.

He also objects to the "abnormal share of administrative time" required by modular scheduling. "I hate to see administrators wrapped up in that kind of a problem."

But, he charged, some of the forces behind modular scheduling are outside the schools, mainly the electronics industry. Dr. Brown said the new schedule forces use of computers and that computer manufacturers and salesmen are pushing the method to sell their machines.

Computers are needed because of the huge number of variables involved in setting individual schedules for all students, each schedule designed to meet preplanned needs and abilities of each pupil. The schedules also have to take into account teachers' class time and unscheduled time, and available space for small and large groups, individual projects and independent study. At Trezevant, the complexity is even greater because each daily schedule is different in a five-day cycle. Students attend school A through E, not Monday through Friday. If the fall term begins on a Wednesday, that first day is A day, the first in the cycle. If a snowstorm closes school for two days following B day, classes will still resume on C day, keeping the cycle of instruction unbroken.

Another unique feature at the Memphis school is the absence of bells or buzzers at the beginning and end of each period. The only bell is one in the morning to start the school day. During the day, every 20

over from the agricultural past. It just does not fit in the kind of world we live in," said Dr. John W. Letson, Atlanta superintendent. "This is an attempt to bring the school structure in line with the times. Education is not a part-time profession."

Change won't be sharp in the beginning, Dr. Letson said. "It won't be a radical change for the first year. We think most students will choose the first three quarters. But as time goes by, there will be a decided shift in their choice." Present trends, he added, indicate that full use of the summer quarter is needed and desired by the students. "If summer school today were provided tuition-free (tuition is required now), we would have one-third to half of our students in summer school."

The plan will also alter the school day of all high-school students and teachers. The day will be extended to 10 periods, retaining the traditional hour-long (or 55-minute) class. "There will be more pupils coming and leaving the schools at different times of the day. It will be more like college," Dr. Letson explained. There will be many variables, including some Saturday classes and some weekdays when students will not attend classes.

Costs of the new school calendar have not been calculated yet, but teachers will be hired on a quoted annual salary. Those who teach only nine months will be paid a pro-rated nine-month salary. "This is not an economy measure," said Dr. Letson. "It will mean an increase in the budget, but it will mean more and better education."

In addition to providing more flexibility in all students' study programs, the year-round school year is favored by many people because it would open school doors to more students and offer more enrichment and special help to both superior and slower students. The full-year school has been recommended in many areas as a special boon to students in the inner-city and other poverty areas.

Vice President Hubert H. Humphrey told a National Education Association audience during its summer convention in Minneapolis that year-round schools were urgently needed, especially as a help to the poor.

"Poor people are poor all year long, not just for nine months a year. Disadvantaged children need help all year long, not all year except during the hot, troubled months of summer. Closing the doors of schools for the summer means a waste of "educational treasure houses," the vice president said. "And these schools," he added, "for many young Americans, are the only positive influences in their lives."

Year-round education is one tradition that was not brought to the United States from England and Europe. Perhaps it should have been, one educator said, echoing the views of others.

"The Europeans have the best system," said Dr. B. Frank Brown, superintendent of Brevard County schools on Florida's east coast. "The students there go to school all year around, but they don't go to school any more than we do. If you add up the days, you'll see that they go about the same amount of time as we do."

Even among educators who support the idea of 12-month schools, there is a reluctance to jump quickly into the practice of it.

"I'm afraid schools would do the same things with the extra time that they are doing now," said Dr. Norton Beach, dean of the school of education at the University of North Carolina and a former professor at Columbia University. "I'd like to see a number of communities experiment with several approaches. I think American schools eventually will be operated all year, but we need to see how it works first.

The programs at Atlanta, Buford, Montgomery, Woodstock and elsewhere may be the first of many experiments in using time, not as a measure of a day or a year but as another teaching tool.

minutes some students in nearly every classroom will dismiss themselves and quietly move on to their next one or to some nonscheduled work. Gone is the clamor of the entire student body pouring out into the hallways every 50 minutes.

But these are just fringe benefits. More efficient use of time, more opportunities for independent study and research, closer contact with teachers and other students as well as smaller groups, highly personalized class schedules for each student, greater opportunity for teachers to teach in depth, and more decisions by students about their own school work are among the claims made by supporters of flexible scheduling.

"The teacher has unscheduled time, too," said William Conn, a science supervisor with the Memphis schools who has worked closely with the Trezevant project and in planning a junior-high program. "The teacher can ask a student back to go over a lecture. She might have a whole morning free to work with students this way, providing more opportunity for a 1-1 teacher-student ratio."

"You can cover more material and you can go back over it again," said Mrs. McNeil, who has been with the Trezevant program since it began. "You can also give more research projects."

"It cuts down on absentees," said Mrs. Ika Austin, a veteran teacher of American history who says she could never teach again in a conventionally scheduled system. "When you meet with a large group, you have fewer absentees because the students know they are not going to hear that lecture again." They also know that that particular class won't appear in the cycle for another five days.

"The technique of teaching is more important than the schedule itself," said Don Tubbs, a social-science supervisor. "It puts the bee of responsibility on the individual student." Students soon realize that "they have an obligation to make mature decisions on how to use their time," he added. School officials at Trezevant and others which use the new method have also learned that they must provide plenty of extra resource materials, good guidance, extra teachers and aides, and often remedial and enrichment courses to make independent work meaningful.

Mrs. McNeil, who generally praises the modular method, expressed one reservation. She said it has reduced the amount of time she can spend with her "standard" (average) students, putting her in touch with more of the slower or better students. But she said this is a problem individual teachers have to solve.

This raises some questions: Can teen-agers, especially those from poor homes who come to school with heavy social, economic and educational handicaps, succeed in such a sophisticated environment as modular scheduling? Can they be expected to use their time wisely? Will it benefit them?

It may be too early to find any lasting or significant changes in the way students acquire information or master skills under the new time schedule. But teachers, principals and other school leaders who have tried it say emphatically that the atmosphere is more natural and is a better setting for learning than under the traditional system. Most students quickly adapt to the new timetable and generally make good use of their unscheduled time.

Although students often may be found sipping soft drinks in the cafeteria during part of their free modules, there is also increased use of the library and other facilities, both librarians and teachers report. Counce said there is high student morale at Trezevant High in Memphis.

"I'm not saying that modular scheduling is the answer for every school," he said. "The real value of it is that it unlocks the concept that everybody should spend the same amount of time in the same course. There is better school morale, and more students ap-

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"Secondary students commonly want 'to get out in the real world.' They think of their schooling, often, as a kind of imprisonment which they can escape by thinking futurally, by projecting themselves into the future or the 'real world.' This makes them dismiss the importance of the present, where decisions are made. It is no wonder that responsibility is taken lightly or dismissed entirely. This is part of what moves us to try to discover the errors involved in time's everydayness, especially as it is communicated in the schools."

Time and the Secondary School,
by James E. Neal and Linda B. Neal
in Teachers College Record,
February, 1967.

preciate the opportunity to make decisions on their own. The boredom of school is also reduced somewhat."

In answer to charges that modular scheduling adds a heavier administrative burden, Counce replied: "There is a greater administrative load in that students are not regimented. It takes more time to keep up with students because you have 20 periods instead of six. But it can work anywhere with the proper administrative staff."

Malcolm Baird, principal of Thomas McKean High School near Wilmington, Del., said the value of modular scheduling at his school goes beyond academic achievement.

"If it is done right, you are able to do more for students. You can offer more opportunities," he explained. "It is much harder for the teachers, but there is more achievement. It is also a more natural, normal way of living." He called the traditional schedule "authoritarian" and said it "holds the students down so that they can get by without learning anything, without learning to develop good habits of thinking. You can't have an autocratic school system if you want to prepare kids for a democratic system of society in which they must live. Modular scheduling breaks this grip which traditional schools have had on these kids. Academic achievement is not the sole aim of a high school."

In an evaluation of the system at McKean High, administrators reported that classroom discipline problems had been almost eliminated. However, about a fourth of the interviewed teachers felt that general discipline was enough of a problem to warrant a special guidance program aimed at preventing problems. Only 3 per cent of the students interviewed said they had more individual contact with teachers, but most youngsters reported a marked increase in contacts with each other, independent study, doing assignments alone, small group studying, homework, reading, and use of the library. They praised the increases and attributed them to the new schedule.

Modular scheduling has found more acceptance in California and other Western states where the technique has been developed by Stanford University. The Stanford plan and another developed by Massachusetts Institute of Technology are being used by a dozen or so schools in the eastern half of the nation, including a few in the southern and border states. But in most instances, the new schedule has been used only in suburban areas such as those served by Trezevant High in Memphis and McKean High near Wilmington. This leaves unanswered the question of its success in schools with large numbers of students from poor urban and rural school neighborhoods.

This fall, however, Memphis is expanding its use of a version of modular scheduling in junior high schools. Ten schools will be using the modified technique, including four serving largely poor neighborhoods. Three of the 10 schools launched an earlier variety of the method two years ago. The new program is part of an overall plan to revise the school system's junior-high-school curriculum.

The junior-high program uses the smaller time module, but does not give the younger students the same degree of independent use of time as does the high-school program. The effect of the junior-high plan is to give more emphasis to more important parts of the curriculum by alloting more time to them. Language arts (English, spelling, speech, reading vocabulary) is combined with social studies in 10 quarter-hour modules or two and a half hours. An hour and 15 minutes —five 15-minute modules—is alloted to a bloc of math, science and health studies. Another hour and 15 minutes is set aside for guided independent study, remedial reading and study skills, remedial math and other special activities. Other school work, including physical education, music and art, is given a share of the school day.

A lot of time is unscheduled—but backers insist that it isn't "free" time.

Three junior-high principals in the new program agreed that the disadvantaged student not only can adapt to the new arrangement of time but can thrive on it, even in the pure modular schedule in high school where he will have more responsibility for his study time.

"Flexibility is one way of avoiding making a student passive in learning and living," said James Barber, a former elementary principal who took over as principal of a new school, Cypress Junior High, this fall. Greater flexibility in school time also "releases the teacher to be more creative," said Barber.

Flexibility in time is a step toward "a more democratic way of living," said Joseph Sweet, former principal of Corry Junior High School, located in a poorer section of the city's southside. "The culturally deprived have been used to authoritarianism all their lives. Now, with flexible scheduling, they can participate in this part of their environment. Now they can begin to live." Sweet will begin as principal of Riverview Junior High, another new school which will use the new junior-high modular scheduling program.

Sweet and Oliver Johnson, principal of Lincoln Junior High School, both agreed that last year's crop of ninth-graders at their schools, could have easily succeeded in a pure modular schedule this year. The number who might not have adapted to it, they said, would have been the same group who would not have succeeded in a conventional school. Both men agreed that the new schedule brought with it more administrative duties, but they said it created a far better education program.

Johnson said he would offer more independence to selected students this year. Youngsters who show promise and maturity will be given "contracts" in which they will agree to accept the challenge of regulating some of their own time.

In many instances, the deprived student may respond more easily to independence than the child from the suburbs where life is more regulated by parents and others in authority, said Nathaniel Ober, an assistant superintendent in the Minneapolis school system. That city's South High School, where 20 per cent of the students are from poor homes, will start modular scheduling this fall.

"The deprived children have often lived with more independence than other kids," Ober said. The traditionally scheduled school "is not a matter of the boys and girls being out of step with the school; it is the school being out of step with the boys and girls. If the schedule is reorganized, we feel that school will have more meaning."

Still, most schools shifted to the modular schedule are suburban schools. Even in school systems where the technique is tried, there is a reluctance to try it in schools serving poor neighborhoods, apparently because of resistance from their principals and faculty and the risk of failure as well as greater cost of the computer-based method. There is a contradiction here since the costs are no higher in inner-city schools than in the suburbs.

Higher costs are a definite factor in flexible scheduling as they are in many innovations. To use it in Memphis' Trezevant High School alone, it requires $50,000 a year—$40,000 for the additional teachers needed, $5,000 for the use of a University of Georgia computer, and $5,000 for extra time spent by school-board office personnel in completing the schedule each year. This total figure will be reduced each year as the technique is improved, officials say. The school board's own computer eventually will be used, they add, reducing the cost even further. Memphis budgets its own funds for the Trezevant project, but Minneapolis and McKean High in Delaware have obtained federal funds.

The extra cost of using a modular schedule is a deterrent to many school leaders, especially those who have a natural reluctance to try radical innovations. But those who have tried it say the benefits offset the cost.

Some schoolmen say that some form of change in the traditional school clock time is inevitable.

"Within the next decade, there will be more flexibility within the (nation's) schools and school systems," predicted Counce. Although South High is the only Minneapolis school using the modular schedule now, seven other schools in nearby districts made the change this year. The schedule eventually will come into general use in Minneapolis, Ober said.

"There will come a time when the high-school schedule will look more like the university schedule," said Dr. Norton Beach, dean of the school of education at the University of North Carolina. "There will be more free time and more blocs of time. There will come times when groups of students will never go near the school for months." ○